

REMARKS

Claims 1-16 are pending in the present application. Claims 1-4 and 6-16 were rejected under 35 USC §103(a) as being unpatentable over US 3,889,485 to Swearingen in view of US 4,362,462 to Blotenberg. Claim 5 was rejected under 35 USC §103(a) as being unpatentable over Swearingen in view of Blotenberg, as applied to claim 4 further in view of US reissue 33,408 to Khan et al.

By this amendment, claims 1-16 have been amended. The amendments to claims 1-16 are to address matters of antecedent basis, alternative phraseology, grammar and to provide for better reading of the claims. Entry of said amendments respectfully is requested.

Regarding the rejections under §103, the following remarks are made with respect to amended independent claims 1 and 13.

Referring to amended claim 1, the subject matter of this claim is directed to a single apparatus, i.e. a compressor. As called for in claim 1, cryogenic cooling occurs between each stage, so for example if there are at least two or perhaps as many as four compression stages in series, then the cryogenic cooling is applied between the first and second, between the second and third, and between the third and fourth stages.

That is not what is disclosed in Swearingen. Swearingen discloses a plurality (for example four) separate compressors 12, 19, 20 and 35 as shown in Figure 3. The last of the compressors disclosed in Swearingen is driven by an expansion turbine 23. The independent drives of the other compressors in Swearingen are shown in Swearingen's drawing figures. Swearingen at column 8, lines 4-13 discloses that compressors 19 and 20 could be combined into a single machine. However, it is clear from Swearingen that

compressors 12 and 35 remain independent and therefore, there is no single compressor disclosed in Swearingen as called for in independent claim 1 of the present application.

The Office Action refers to cooling in the heat exchanger 18 of Swearingen. The stream that flows from the compressor 35 through conduit 11 to the heat exchanger 18 in Swearingen is in fact heated by its passage through the heat exchanger 18. Therefore, there is no removal of heat of compression in the heat exchanger. Further it can be clearly seen that no cooling is provided between the compressor 12 and the compressor 19 of Swearingen. Similarly, there is no cooling between the compressor 19 and the compressor 20. Therefore, the subject matter of claim 1 in the present application is neither disclosed nor suggested in Swearingen.

In addition, merely adding the disclosure of Blotenberg would still not arrive at the invention of claim 1. That is, modifying Swearingen by including a valve system disclosed in Blotenberg would still not arrive at the compressor of independent claim 1, wherein there is "at least one cooling means disposed between the compression stages, wherein the at least one cooling means is a cryogenic cooling means having valve means for controlling flow of cryogenic coolant into the cryogenic cooling means in response to an inlet temperature, or a related parameter, of the compression stage next in series downstream of the cryogenic cooling means . . ."

Therefore, it respectfully is submitted that the subject matter of amended claim 1 is not obvious in view of Swearingen and Blotenberg.

The remarks above with respect to amended independent claim 1 are repeated herewith with respect to amended independent claim 13. Accordingly, it respectfully is submitted that, in addition to there being no reason for one skilled in the art to combine the disclosures of Swearingen and Blotenberg, any such combination would still not arrive at the subject matter

of independent claim 13. Even if one were so inclined to make such a combination as purported in the Office Action, and it respectfully is submitted that such would not be the case, the resulting process would still not include "cooling compressed boiled-off natural gas by a cryogenic coolant downstream of one of the compression stages and upstream of another one of the compression stages in series . . .". Accordingly, it is respectfully submitted that independent claim 13 is not obvious in view of Swearingen and Blotenberg, whether taken alone or in combination with each other.

The dependent claims 2-12 depending from amended independent claim 1, and dependent claims 14-16 depending from amended independent claim 13, should also be allowable in view of their dependence upon the patentably distinguished independent claims as discussed above.

An Information Disclosure Statement (IDS) and fee are submitted herewith pursuant to 37 CFR 1.97(c)(2). The disclosures in the references cited in the IDS, whether taken alone or in combination with each other or any of the other references made of record in the present case, do not render the claimed subject matter unpatentable.

All issues raised in the Office Action are believed to have been addressed. In view of the foregoing amendments and remarks, favorable action on the merits, including entry of all amendments and allowance of all claims pending, respectfully is requested.

Respectfully submitted,

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